

TRANSBOUNDARY GAS GROUP MEETING NOTES

DOUBLETREE HOTEL CITY CENTER SPOKANE, WASHINGTON

April 23, 2003

1. Greetings and Introductions.

Chair Mark Schneider, of NOAA Fisheries, welcomed everyone to today's meeting, then led a round of introductions and a review of today's agenda.

2. Operational Factors Influencing Dissolved Gas Production at Hydroelectric Projects on Tributaries to the Transboundary Reach of the Columbia River.

Schneider distributed a table, developed by Helen Rueda of the U.S. EPA, as an example of the type of table the TGG might use to gather information about tributary hydro projects. You may recall that, when the TGG was first formed, we put together a table like this one, included in the original framework document, gathering up basic information about all of the projects in the Columbia Basin that may contribute to the dissolved gas load in the system. Schneider asked the group, in the course of today's discussion, to verify that the information in Rueda's table is accurate, and to add information that does not appear in the table right now, with the goal of creating a sort of "one-stop-shopping" source of key information on each of the projects in the basin.

One participant described the background for this agenda item, noting that the TGG steering identified this issue several months ago. Most of our discussion, since this group was formed, has focused on the mainstem projects, he said; what we haven't really talked about is the role of the upstream facilities – on the Spokane, the Pend Oreille and the Kooteney. The point of this agenda item is to help us better understand how the system works, in terms of gas production, he said. For example, one intriguing possibility is using Hungry Horse to pond water that otherwise might have to be spilled at Boundary Dam, he said.

The first presenter was Dave Zimmer of the U.S. Bureau of Reclamation, who discussed operations at Hungry Horse Dam on the Flathead River. Zimmer touched on the following major topic areas:

- Hungry Horse's geographic location and physical layout/configuration of this project
- The surprisingly high incoming gas levels at the facility (up to 115%), given the fact that there are no hydroelectric projects upstream
- The fact that Hungry Horse's low (3 Kcfs-4 Kcfs) mean annual discharge limits the operational flexibility needed to use the project to abate gas downstream

- The fact that the shutdown of the aluminum plant at Columbia Falls may eventually result in more spill at Hungry Horse, although the project has not spilled since 1996.

Will VAR-Q operation result in higher outflows from Hungry Horse during the freshet? one participant asked. In some years, it might cause a slight increase in spring outflow at the project, Zimmer replied; it could also have an impact on peak spill and the duration of spill at the project in some years.

The next speaker, Don Whitecamp of Avista, briefed the group on the Noxon Falls and Cabinet Gorge projects on the Clarke Fork River. He touched on the following major topic areas:

- The geographic location and physical layout/configuration of each project
- The dissolved gas issues at these projects
- The FERC-dictated structural and operational modifications at each project to mitigate for dissolved gas
- The results of physical monitoring (gas up to 145% downstream of Noxon in some years)
- Results from biological monitoring (high incidences of Level 1 and 2 signs during high-spill periods, but no mortality observed)

It sounds, then, essentially as though you observed what we have in the lower river, said Schneider – that most of the fish are able to move around vertically to avoid high levels of dissolved gas. One other point is that this is a free-flowing reach, and during high-flow periods, the water really rips through this area, said Whitecamp – there is very little near-surface water these fish can hold in, other than the near-shore areas.

Next up was Bruce Howard of Avista, who briefed the group on the Spokane River projects: the Post Falls projects, Upriver Dam, Upper Falls Dam, Monroe Street, Nine Mile Falls Dam, Long lake and Little Falls Dam. He touched on the following major topics:

- The timing of peak flows through the Spokane system: any time from December to July.
- The age of these projects: built between 1890 and 1925
- Hydraulic capacity: very low, which leads to spill almost every year
- The limited operational control exerted by the project operators over the outflow of Lake Coeur d'Alene
- The geographic location and physical layout/configuration of each project
- TDG issues at these projects: typical tailrace gas levels in the 110%-125% range during peak spill periods
- Access to water quality study data on these projects – the public record and the Avista website

The next speaker was Kent Easthouse of the U.S. Corps of Engineers Seattle District; his topic was Libby and Albeni Falls Dams on the Kootenai and Pend Oreille Rivers, respectively. Easthouse touched on the following major topics:

- The geographic location and physical layout/configuration of each project
- The limited information available on gas production at Albeni Falls and the 2003 Corps study of gas production during the normal operation of the dam.
- The large amounts of information on gas production at Libby Dam, particularly on the high levels of dissolved gas produced during spill at that project

The next speaker was Kim Hayden of Seattle City Light, who addressed water quality issues at Boundary Dam. She noted that, in conjunction with Boundary's relicensing process (scheduled for completion in 2011), Seattle City Light has formed a water quality work group to get a better handle on Boundary's impacts on water quality. She touched on the following major topics:

- Results from last year's spillway test at Boundary
- The geographic location and physical layout/configuration of the project
- Results from the recent spill test and water quality monitoring at Boundary

At the end of this session, the flip chart held the following notations, showing potential informational categories to be added to the tributary project table:

- TDG monitoring – forebay, tailrace
- Spillbay number, capacity and type
- SARA/ESA requirement – species
- Gas abatement actions – structural, operational
- Powerhouse entrainment
- Reservoir length/free-flow river
- Number of turbines/spillbays
- Stilling basin depth
- Meteorological station
- 7Q10

3. Monitoring in the U.S. and Canada.

[NOTE: due to a defective tape, most of this agenda item is missing – J.K.]

At the conclusion of Laura Hamilton's presentation on the Corps' QA/QC protocols, the group agreed to collect the written protocols that have already been developed by the TGG's participating agencies and utilities for posting to the TGG website or email distribution to the other TGG participants. Paul Pickett will take the lead on the document collection project.

4. Round-Table Discussion.

Schneider asked the group to begin this discussion item by considering Chief Joseph spillway deflectors. He noted that the Biological Opinion calls for the installation of flow deflectors at Chief Joseph Dam; Congress recently appropriated some funds to get this project underway, but in the interim, the Water Quality Team has been exploring the possibility of using

Grand Coulee generation to minimize spill at Chief Joseph. The WQT concluded that it would be possible to reduce TDG production at the two projects through such a swap. One Corps participant noted that the funds received to date will allow the Corps to complete the flow deflector design by 2004; construction is scheduled to begin in 2005 and to be completed in 2006. This assumes Congress will appropriate the \$30-\$35 million needed to complete the Chief Joseph flow deflectors; the President has included only an additional \$1 million for this project in his FY'04 budget.

In response to a question, Schneider said the WQT subgroup working on this issue had developed a brief memo laying out the operational conditions under which the Chief Joseph/Grand Coulee spill/generation swap would occur; he said he will distribute this document to the other TGG members.

The next discussion topic was results from the TGG's letters of support for the Brilliant and Waneta Expansion projects; a Canadian representative said the TGG's letter did help the Brilliant expansion project receive approval. Construction on the expansion project began last week, and is scheduled for completion in 2006. In response to a question, another Canadian participant said the TGG's letter of support for the Waneta expansion has mainly been used internally, and has not yet been distributed externally.

5. Next TGG Meeting Date.

The next meeting of the Transboundary Gas Group was set for October 22-23 in Nelson, B.C. Meeting summary prepared by Jeff Kuechle.